



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1201 ELM STREET, SUITE 500
DALLAS, TEXAS 75270

March 29, 2021

Charles W. Munce, P.E.
GHD Services Inc.
5551 Corporate Boulevard, Suite 200
Baton Rouge, Louisiana 70808

RE: San Jacinto Supplemental Design Investigation Sampling Plan
San Jacinto River Waste Pits Site
EPA Region 6, CERCLA Docket No. 06-02-18 for Remedial Design

Dear Mr. Munce,

The Environmental Protection Agency along with other agencies have reviewed the February 19, 2021, submission of the *San Jacinto Supplemental Design Investigation Sampling Plan* for the San Jacinto River Waste Pits Superfund Site. Based on the review, the following comments on the sampling plan are enclosed. Please address these comments and submit the final document.

Please contact me if you have any questions regarding the comments or wish to set up a call to discuss them. You may reach me at 214-665-7597.

Sincerely,

Ashley Howard

Ashley Howard
Project Manager

Enclosures

cc: Katie Delbecq, TCEQ
Latrice Babin, Harris County
Trae Camble, Port of Houston

EPA Review Comments
San Jacinto Supplemental Design Investigation Sampling Plan
San Jacinto River Waste Pits Superfund Site

General Comments

1. Additional waste characterization samples should be taken in locations of known contamination to supplement waste characterization sampling performed during previous PDI activities. Update the plan to include details regarding this additional effort.

Analytical Samples Comments

1. **Section 2.1.1:** The plan proposes that if the 16-18 ft interval is above the clean-up level, the next interval sample will be analyzed, and so on until a clean interval is observed. To save time and thoroughly delineate the bottom of waste, all three of the archived samples below 18 ft bgs should be analyzed if the 16-18 ft bgs interval concentration is above the clean-up level.
2. Priority should be given to sample locations where TEQ levels > 30 ng/kg have been observed at depths of 18 ft bgs or more so that analytical results can be reviewed while fieldwork is ongoing and additional samples can be taken if needed. Update the plan to include a schedule/timeline that identifies prioritized sampling locations.
3. One stated objective of the additional sampling is to “further delineate the vertical extent of the material exceeding the ROD clean-up level **around the perimeter** of the excavation area to support the recently optimized conceptual BMP design.” The 30% Northern Impoundment Remedial Design states that “Once the BMP is designed and constructed, excavation to deeper elevations in an attempt to reach a clean-up level cannot exceed the design excavation elevations for the BMP, as doing so has the potential to put more hydraulic force on the BMP and presents a risk of a significant BMP failure.” The depth of the dredge prism for BMP design would need to accommodate the uncertainty in the depth of contamination. Therefore, particularly in areas in proximity of the BMP that would impact BMP stability, review the spatial coverage of sample points to ensure there is sufficient density to reduce uncertainty in the dredge prism design. This information will aid in designing a structurally robust BMP that is capable of withstanding forces associated with excavation of all impacted materials in the deeper areas of the Northern Impoundment.
4. Conduct more extensive delineation at the deep northwestern corner of the removal area and surrounding the articulated concrete block mat (ACBM).
5. Conduct more extensive delineation in the southeast corner of the site in the vicinity of cores SJSB046, SJSB046-C1, and SJSB047-C1.
6. Supplemental borings are required as part of this sampling event if previous borings did not reached TEQ levels < 30 ng/kg.
7. Some of proposed supplemental borings are close to a PDI-2 sample location showing contamination as opposed to equally spaced between two PDI-2 sample location showing contamination, such as SJSB085 and SJSB076, despite the adjacent core having reached clean. Review these sample locations.

Geotechnical Samples Comments

1. **Figure 3.** Update Figure 3 to include locations of geotechnical samples that were taken during previous investigations.
2. Based on the proposed CPT exploration plan along the alignment of the BMP, conduct at least one CPT adjacent to a previously completed SPT boring with laboratory shear strength and consolidation testing for data comparison and site specific correlation. Update plan to include discussion on how this correlation will be done.
3. Per prior designs and documentation, a key concern with the site stratigraphy is potential long-term strengths of the clay layers. Testing was performed in the preliminary subsurface investigation to characterize the long-term strength. Based on the original and new findings, tabulate skin friction values for steel piling that could be referenced by a Contractor for developing the pile installation plan, and possible removal during the Remedial Action.
4. Review the site history to evaluate the risk of potential early CPT refusal due to obstructions and/or stiff/dense soil conditions. The CPT operator should evaluate the existing conditions to confirm the equipment can penetrate to the required depths. Additionally, if CPT cannot be advanced, adjustments to the sampling locations may be made in the field. Add a description as to how these decisions will be made and what the adjustment will be.

Piezometer Installation Comments

1. **Section 2.3:** As stated in the plan, “With the change in planned excavation methodology, the design must now account for deep excavation areas that will be excavated in the dry.” During the March 2021 TWG meeting we discussed the concern that hydraulic heave may be more likely to occur in the deep excavation areas. There was also discussion regarding the placement of the piezometers and whether there was a need for installation of additional deep piezometer(s) in the northwest area and eastern area where deep excavations are planned in addition to the proposed locations. After consideration of this concern, update the plan to include additional deep piezometers, or add an explanation to support how the proposed location near boring SJMW-016 will be representative of the pressures at other deep excavation areas at the site.
2. **Section 2.3, p. 5:** The final paragraph of this section proposes that a slug test will be performed to evaluate the hydraulic conductivity of the strata through which each temporary monitoring well is screened. Aquifer tests were not part of the Pre-Design Investigation Phase 2 (PDI-2) scope of work so standard operating procedures (SOPs) for aquifer testing methodology were not included in PDI-2 Field Sampling Plan Appendix C-1. Please provide an SOP or similarly detailed description of the aquifer testing methodology proposed (slug test and Pressure meter test).
3. **Section 1.2 Objectives, Fourth bullet:** As discussed in the March 2021 TWG, lateral hydraulic conductivity of the waste materials may be needed for estimating drainage from the waste pile while excavating deeper areas. During the March 2021 TWG meeting, it was clarified that the slug test from the upper well screen will provide an estimate of the lateral drainage or seepage from the waste pile during drawdown activities. Update the report to clarify how the proposed method in the plan will measure lateral hydraulic conductivity.